

NEW ENGLAND NOTE

NEW RECORDS FOR *SCIRPUS ANCISTROCHAETUS* IN  
NEW HAMPSHIRE

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In 1992, the New Hampshire Natural Heritage Inventory (NHNHI) procured a Section 2 grant from the U.S. Fish and Wildlife Service (USFWS) to perform de novo inventories for northeastern bulrush (*Scirpus ancistrochaetus* Schuyler) in New Hampshire. While the site location for this bulrush was in Vermont, across the Connecticut River from Walpole, New Hampshire (see Schuyler 1962), it had not been found at that time in New Hampshire. Northeastern bulrush was listed by USFWS as endangered in 1991 and a recovery plan was prepared and signed in 1993. Listing was based on the lack of protection for nearly all of the known sites and the high degree of threat from imminent development pressure (United States Fish and Wildlife Service 1991). The Natural Heritage Program lists this species as globally rare (G3) since its discovery at over 50 sites along the Appalachians between western Virginia and southwest New Hampshire (A. E. Schuyler pers. comm. 1996). It is listed as S1 (critically imperiled with five or fewer occurrences) in four states, S2 (imperiled with six to 20 occurrences) in three states, extirpated (SX) in one state, and as a Division 1 species in the *Flora Conservanda* (Brumback and Mehrhoff, et al. 1996).

The NHNHI hired Woodlot Alternatives, Inc. to perform searches for northeastern bulrush during three-to-four days each in 1992, 1993, and 1994. Aerial photographs were reviewed before initiating searches in the towns of Acworth, Charlestown, Langdon, and Unity in Sullivan County, and the towns of Alstead, Gilsum, Surry, and Walpole in Cheshire County, New Hampshire. Fifty-four sites were selected out of 125 potential sites and seven



of these contained populations of northeastern bulrush. A sample from the first population found was verified by A. E. Schuyler in the field the following year. Each population was found growing in wetlands where natural water levels had been altered by either beaver or human-caused draining of small ponds by culverts and beaver dam removal.

In 1992 likely sites along the Connecticut River were visited by canoe but no new populations were found there, although it was re-located at the type locality originally described by Schuyler. Other sites were visited on foot in 1992 and the following two years. When an area was found to have the appropriate habitat (open graminoid/sedge swales, evidence of fluctuating water levels, and bulrushes) the wetland was searched intensively for *Scirpus ancistrochaetus*.

*Scirpus ancistrochaetus* was found in wetlands with the following characteristics: saturated to slightly inundated (to 18 in. deep) emergent benches found next to slightly deeper emergent zones (e.g. areas too shallow for floating-leaf emergent plant species, and too deep for woody plants); fluctuating water levels (stagnant water levels allow succession to shrub and forested natural communities); associated plant species included *S. cyperinus* (L.) Kunth, *S. atrovirens* Willd., *Leersia oryzoides* (L.) Swartz, *Schoenoplectis tabernaemontani* (C. C. Gmel.) Palla, and *Sparganium androcladum* (Engelm.) Morong, which was almost always found close by in an "off shore" zone.

The most useful field characteristics for identification of the species were: (1) drooping, glomerular fruiting heads (these are similar looking to the fruiting heads of *Schoenoplectis tabernaemontani*—drooping heads are supported by curved inflorescence rays that rarely project upwards or straight out, as the inflorescence of *Scirpus cyperinus* may, and as *S. atrocinctus* Fern. and *S. hattorianus* Makino almost always do); (2) dark, chocolate-brown florets (*S. cyperinus* has tawny brown florets); and (3) broad bracts (close to 3/4 in. wide, while *S. cyperinus* has narrow acuminate bracts).

Once identified, the number of fruiting heads and the number of vegetative shoots per clone were counted in small patches of plants (less than 100), and estimated from counts of subsamples in large patches of plants. Collections of *Scirpus ancistrochaetus* were made if more than 20 fruiting culms were present, otherwise portions of the inflorescence were sampled for a voucher speci-



men and photographs were taken. Voucher specimens have been deposited in the Hodgdon Herbarium (NHA) at the University of New Hampshire in Durham. Wetland communities were described using The Nature Conservancy Eastern Heritage Task Force 1991 Site Survey Summary and Special Plant Forms, and using Natural Community Forms developed by NHNHI. Inventories of associated plants and their relative abundance were recorded for the field forms. In addition, the population's location in relation to present and former water levels, topography, and juxtaposition to other vegetation zones was mapped and/or described. All data forms and site specific information reside at NHNHI in Concord, New Hampshire and with the USFWS in Hadley, Massachusetts.

SPECIMEN CITATION: NEW HAMPSHIRE: Sullivan Co., Langdon, (elev. ca. 235 m), 22 foliose culms and 7 fruiting stems, growing on the edge of a breached headwater beaver pond in four clonal clumps, 9 Oct 1992, *Royte s.n.* (NHA); Charlestown, western bay of a pond, 119 fruiting stems and 150 leafy shoots were found in five patches, 18 Aug 1993, *Royte, von Oettingen, Schuyler & Schuyler s.n.* (NHA); (elev. 235 m) a large beaver flowage with beaver-impounded meadows in two tributaries (elev. 244 m and 250 m) there were a total of 400+ foliose shoots and 250 fruiting stems, found growing with *Scirpus cyperinus*, *Leersia oryzoides*, and *Dulichium arundinaceum*, 19 Aug 1993, *Royte s.n.* (NHA); marsh on the west side of road, (elev. 260 m), 115 fruiting stems and 75 foliose shoots were found growing on the wetland edge 2–5 cm above a large emergent zone dominated by *Sparganium androcladum*, 19 Aug 1993, *Royte s.n.* (NHA); headwater wetland (elev. ca. 260 m), 23 foliose culms and 15 fruiting stems were found in two clumps in two areas, both clumps were isolated islands near larger island clumps of *Scirpus cyperinus* and *Leersia oryzoides*, the water depth of 38–61 cm appeared to be higher than normal, 15 Aug 1994, *Royte s.n.* (NHA); wetland, along the northern shore of a beaver flowage (elev. ca. 319 m), 40–50 foliose culms and 23 fruiting stems in an emergent bench of *Leersia oryzoides* with 38–46 cm of water, 19 Aug 1994, *Royte s.n.* (NHA).

#### LITERATURE CITED

- BRUMBACK, W. E. AND L. J. MEHRHOFF, in collaboration with R. W. ENSER, S. C. GAWLER, R. G. POPP, P. SOMERS, AND D. D. SPERDUTO, with assistance from W. D. COUNTRYMAN AND C. B. HELLQUIST. 1996. *Flora Conservanda: New England*. The New England Plant Conservation Program (NEPCoP) list of plants in need of conservation. *Rhodora* 98: 223–361.



SCHUYLER, A. E. 1962. A new species of *Scirpus* in the northeastern United States. *Rhodora* 64: 43–49.

UNITED STATES FISH AND WILDLIFE SERVICE. 1991. Endangered and threatened wildlife and plants; determination of endangered status for *Scirpus ancistrochaetus* (northeastern bulrush). *Federal Register* 56: 21091–21096.